

# Virtuoso®

The 3 cell mattress family



Alternating pressure mattress system

# Solution for intensive, acute

The broad range of options of the Virtuoso® mattress means it can be used in various areas of hospital and nursing care as well as for tailored requirements. All the models are compatible with one compressor.



Intensive care



Acute care

# and long-term care

## CLINICAL STUDY

The use of support surfaces is included in nearly all evidence-based clinical practice guidelines as a component of comprehensive pressure ulcer prevention programs and treatment recommendation.<sup>1</sup>



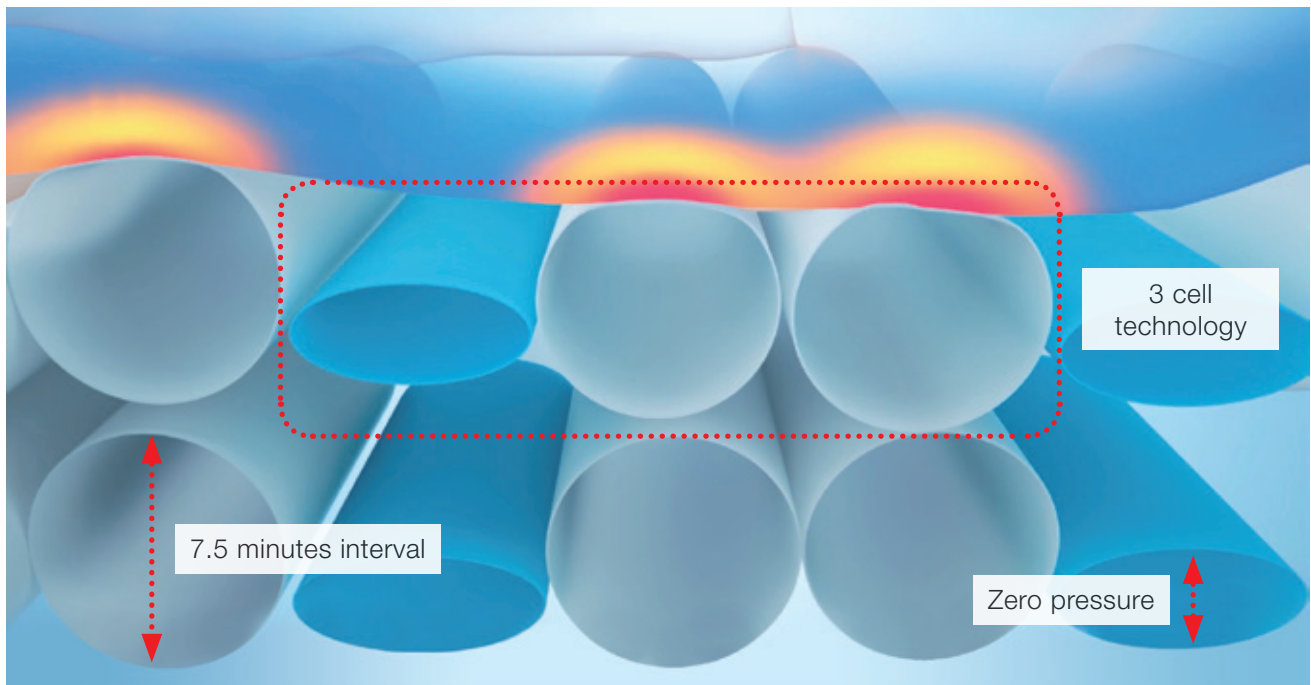
Long-term care





# Technology for prevention of

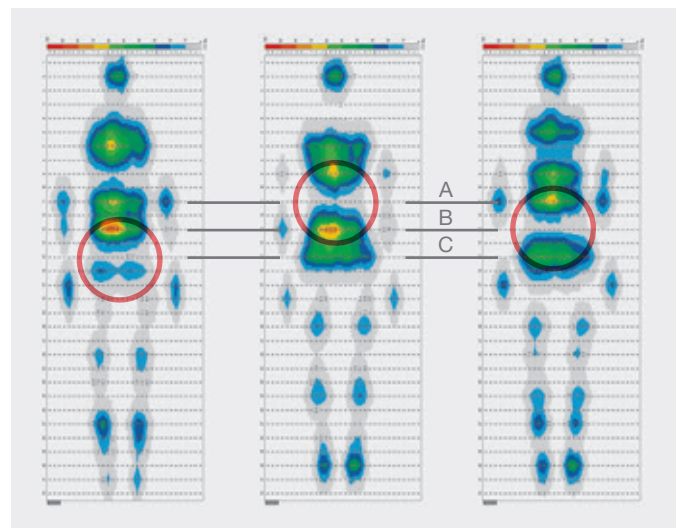
The Virtuoso® mattress system has been designed to meet the most demanding nursing needs when caring for patients with a risk of pressure injuries.



3 cells

## 3 cell technology

The patient body weight is distributed evenly across two thirds of the surface thus allowing the mattress to be soft and comfortable without compromising its clinical outcome. Moreover, since only one third of the surface is active at a time (inflating/deflating) it provides optimum stable support to the body enabling maximum pressure relief to be achieved.<sup>2-6</sup>



Zero Pressure 3 cell (A, B, C) cycle

# pressure injuries



zero pressure

## Zero pressure

The Virtuoso® with 3 cell technology provides the benefits of Zero Pressure for maximum prevention and regular application and removal of pressure for maximum therapy.<sup>2-6</sup>



7.5 minute

## 7.5 minute cycle

None of the patients who moved more than 56 times during the night developed tissue damage. This frequency is equivalent to about one movement every 7.5 minutes.<sup>5</sup>

## CLINICAL STUDY

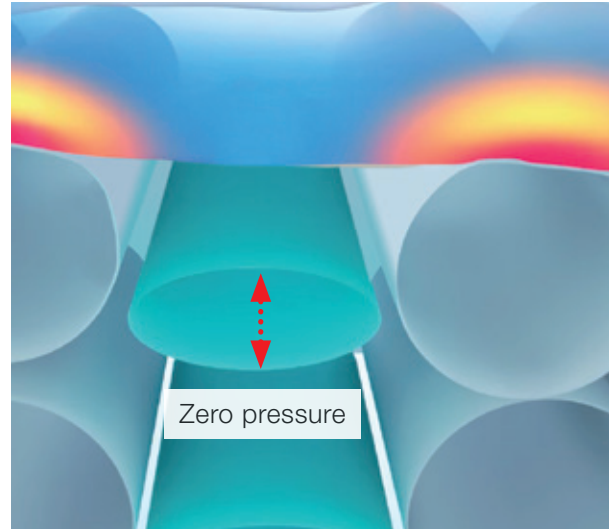
Kosiak studied the link between pressure and time showing that even very low pressure can lead to tissue damage. He concluded that since it is impossible to completely eliminate all pressure for a long period of time, it becomes imperative that the pressure be completely eliminated at frequent intervals in order to allow circulation to the ischaemic tissues and prevent pressure injuries.<sup>2</sup>



MCM

## Microclimate Management

In the context of pressure injuries, microclimate usually refers to skin temperature and moisture conditions at the skin-support surface interface.



## Automatic Fowler Boost



The system increases the mattress pressure in the seat sections automatically and linearly when the backrest is raised. The linear pressure increases between 11–46 degrees for Virtuoso® Pro, Virtuoso® 300 and Virtuoso® 200. In other models it works when the backrest is adjusted at 30 degrees.

## CLINICAL STUDY

“Increased skin moisture contributes to maceration and skin breakdown, it weakens the stratum corneum, leading to skin damage by external forces.” (MCM)<sup>8</sup>

“According to Gefen’s mathematical model, microclimate conditions will affect skin tolerance leading to superficial skin changes.” (MCM)<sup>9</sup>

# Solutions for intensive care

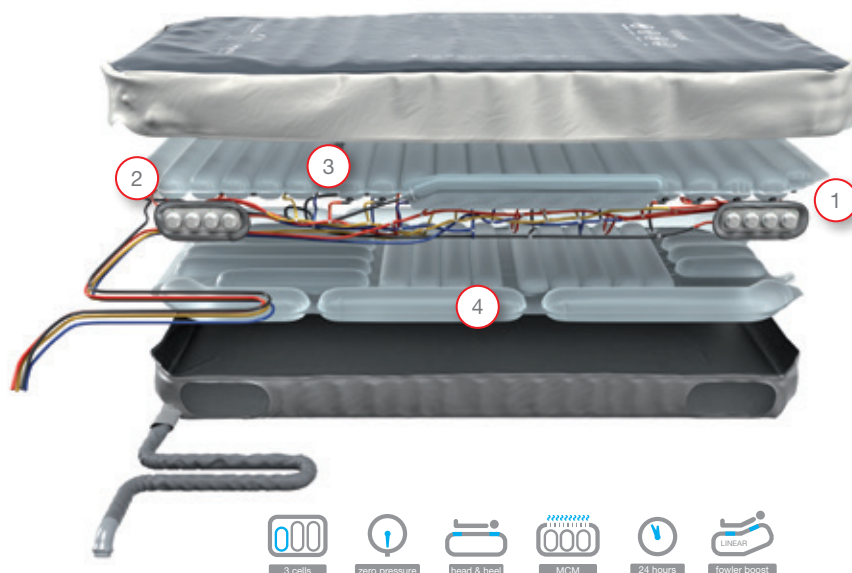


## Virtuoso® 300

For patients with a very serious condition as well as for prevention and support of pressure injury.

### Head and heel zoner

Virtuoso® 300 is equipped with four separate valves in the head area. That can be individually set at three positions – static, alternating and deflation to suit the needs of the patient and to support daily nursing procedures. Four separate valves can be set individually at two positions in the heel area – alternating or deflation. The selective deflation feature maximises pressure elimination in the high risk area of the patient's heel.



# Virtuoso® PRO

For critical ICU patients with compromised mobility and at very high risk of developing pressure injuries but with specialist nursing needs of:

- Elimination of pressure at key body sites due to the severity of existing injuries or very low tolerance to alternating pressure in these areas.
- Access for clinical staff to the patient or nursing procedures.
- Space below key body sites allowing use of other medical devices that may present additional pressure area risk when applied/ attached to the patient.
- Permanent deflation of top deck air cells to make space for body parts for Prone nursing.

## CLINICAL STUDY

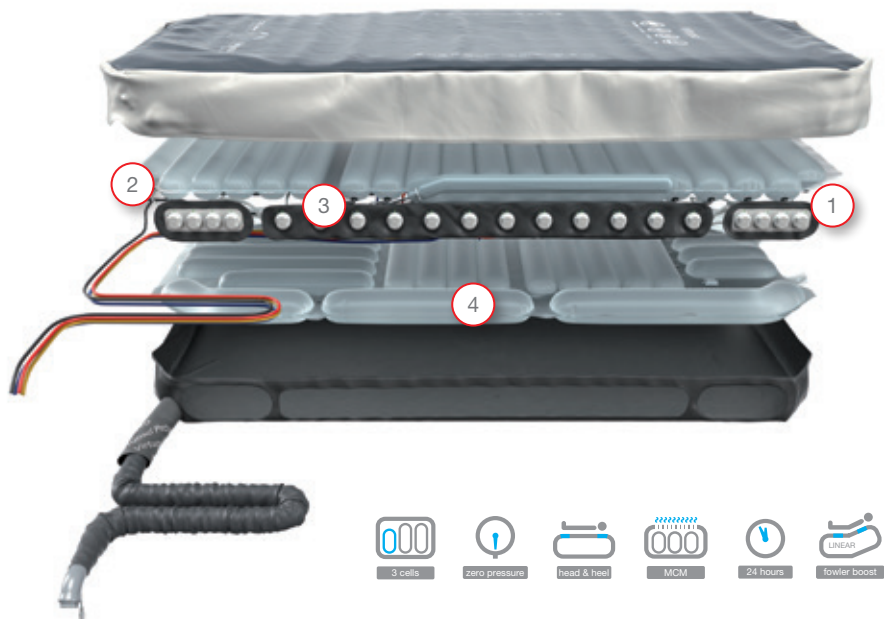
“Prone positioning is a supplementary strategy available in managing patients with ARDS. It was first described 40 years ago.”

“Current evidence strongly supports that prone positioning has beneficial effects on gas exchange, respiratory mechanics, lung protection and hemodynamics.”<sup>7</sup>

## Safety Cycle

Special safety function providing additional patient protection preventing bottoming out when one or more cell valves are used to deflate the mattress area for clinical purposes.

- 1 Head zone
- 2 Heel zone
- 3 Torso section
- 4 Alternating bottom deck



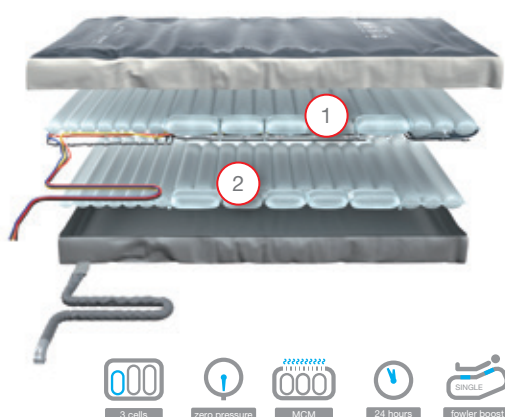


# Solution for acute care



## Virtuoso® 200

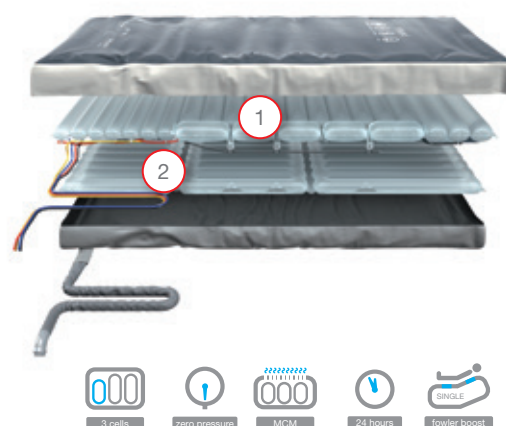
A suitable high quality alternating pressure mattress for patients in standard departments. It has two alternating layers therefore offering effective prevention of pressure injuries.



- 1 Top Air layer with static head cells, alternating torso cells and alternating foot section cells
- 2 Bottom deck with static head cells, alternating torso and leg cells and static foot section cells

## Virtuoso® 100

An option for patients with low-risk pressure injuries. It is a combination of an alternating air layer with a static air layer.



- 1 Top Air layer (static head cells, alternating torso and foot section cells)
- 2 Bottom deck with 3 static sections

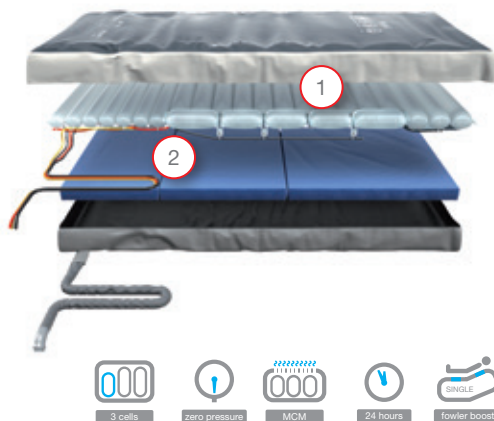


# Solution for long-term care



## Virtuoso® 50

High quality and comfortable mattress for partially mobile or dependent patients.



- 1 Top deck with static head cells, alternating torso cells and alternating foot section cells
- 2 Bottom deck with passive foam base

## Virtuoso® Overlay

A simple, but still a highly effective option of the Virtuoso® range. The alternating layer offers zero pressure and 3-cell technology. This mattress is placed on a standard mattress.



- 1 Layer with static head cells, alternating torso, leg and foot section cells

# Optimization of care

## System control unit

The Virtuoso® system control unit (scu) is designed with ergonomics and ease of handling in mind. It is easy to carry and to mount on the bed. The simple to use front panel controls with clear graphical symbols make operation easy to learn and remember.

It is possible to connect 6 different mattresses and alternating seat cushion to one single SCU.



## 4 working modes



alternating

Alternating Pressure Therapy Mode is intended to be used as an aid to patient care in prevention of skin breakdown related to pressure damage.



MAX mode

Max inflate presents firm and stable support for patient care. After 30 minutes it automatically switches to the alternating mode to prevent the risk of pressure injuries.



CLP

Constant low pressure mode keeps the mattress pressure at the selected level. The pressure is checked every 30 seconds and adjusted if necessary.



transport

Transport mode facilitates the transport of the patient in the bed as the mattress remains inflated when disconnected from the SCU.

# Safety of care

Virtuoso provides many features specifically to enhance the safety of all who come into contact with this product.



## CPR

Operated by one hand, CPR enables rapid deflation for emergency situations and is accompanied by visual and audio alarms to prevent inadvertent use.

Also reduced potential power cable damage increases equipment availability and decreases repair costs.

## Cable management

The easy to use cable management system eliminates the tripping hazard for staff and visitors.

## GO Button

Locks out controls when they have not been used for 3 minutes lowering the chance of human errors and accidental operation.



# 24h care



24 hours

With the 2-cell alternating overlay seating cushion the patient is always protected. The optional alternating pressure dynamic seat cushion facilitates 24-hour care and uses the same system control unit as the mattress. SCU automatically changes to cushion mode when the cushion is connected, no manual adjustment is required. The special overlay design of the cushion enables comfortable use on different furniture and/or mobilization chairs.



## CLINICAL STUDY

“The mainstay of PU prevention practice is the provision of pressure redistribution support surfaces (mattresses, cushions) and patient repositioning, to minimize both the intensity and duration of pressure exposure of vulnerable skin sites, not adapted to sustained and/or excessive loading.” (PU)<sup>10</sup>



# Easy cleaning and servicing



service

## Easy cleaning with protected zipper

Designed using technology which has proven its reliability in demanding healthcare settings worldwide. Mattresses are easy to clean because of cell structure and 360 degrees covers with protected zipper. We also incorporate features to make servicing straightforward and quick, so you can rely on and trust our products will deliver continuous care for your patients.\*

## Water proof and vapour permeable cover

The four-way stretchable dartex cover is fully waterproof and vapour permeable. It prevents the risk of infection by fluid being absorbed into the mattress surface. Also reduces the risk of skin maceration due to liquid absorption and patient perspiration.

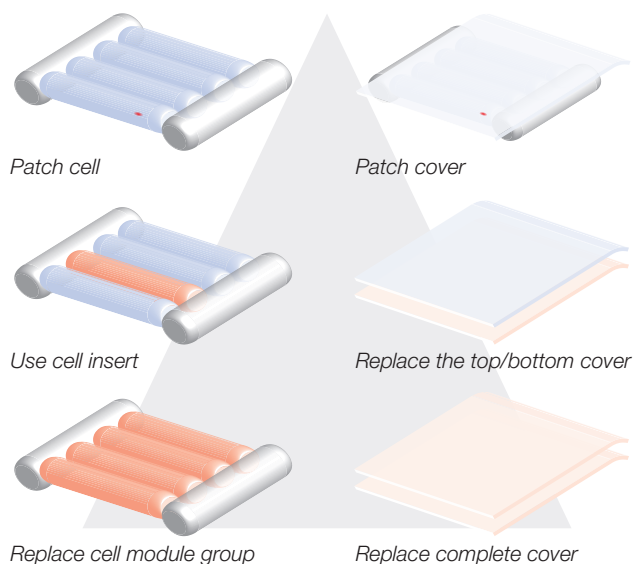
\* Covers are washable and wipe disinfectant with different common agents are possible.



## Servicing

The three-level repair strategy, patches, single cells or modules enable cost effective mattress air cell and cover maintenance.

Service Data Interface Unit (SDIU) with infrared connection helps keep maintenance costs and times down to a minimum.



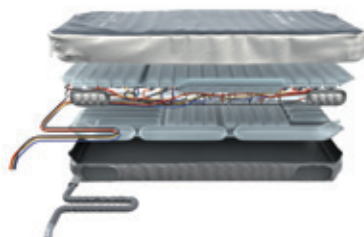
# Variability

There are 6 models of Virtuoso® mattress



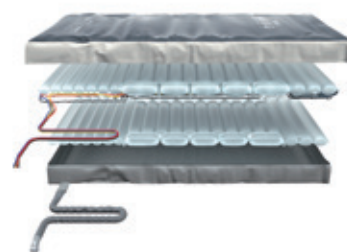
Virtuoso® PRO

Mattress dimension	Length (mm)	2,040
	Width (mm)	900
	Depth (mm)	230
	Weight (kg)	13
Misc.	Number of cells	20
	Maximum patient weight (kg)	254



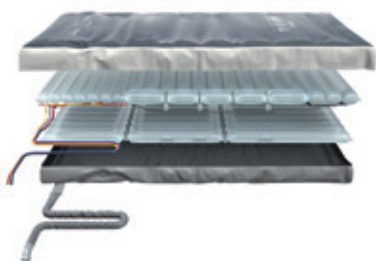
Virtuoso® 300

Mattress dimension	Length (mm)	2,000
	Width (mm)	900
	Depth (mm)	230
	Weight (kg)	12
Misc.	Number of cells	20
	Maximum patient weight (kg)	254



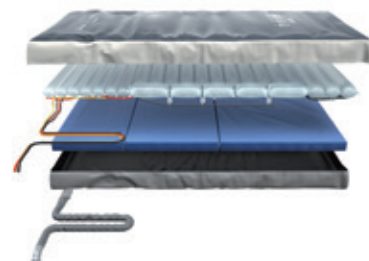
Virtuoso® 200

Mattress dimension	Length (mm)	2,000
	Width (mm)	860
	Depth (mm)	190
	Weight (kg)	10
Misc.	Number of cells	21
	Maximum patient weight (kg)	210



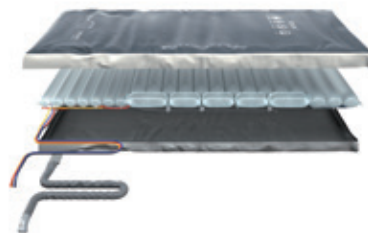
Virtuoso® 100

Mattress dimension	Length (mm)	2,000
	Width (mm)	860
	Depth (mm)	170
	Weight (kg)	8,5
Misc.	Number of cells	21
	Maximum patient weight (kg)	210



Virtuoso® 50

Mattress dimension	Length (mm)	2,000
	Width (mm)	860
	Depth (mm)	170
	Weight (kg)	12,5
Misc.	Number of cells	21
	Maximum patient weight (kg)	200



Virtuoso® Overlay

Mattress dimension	Length (mm)	2,000
	Width (mm)	860
	Depth (mm)	110
	Weight (kg)	6,5
Misc.	Number of cells	21
	Maximum patient weight (kg)	180

Cover – Dartex (MI200), 4 way stretch with 360° zip, High Moisture Vapour Permeability, Water/Fluid Resistant (for all models)



# Technical parameters

Virtuoso®		Virtuoso® PRO	Virtuoso® 300	Virtuoso® 200	Virtuoso® 100	Virtuoso® 50	Virtuoso® Overlay
AIR DECKS	Overlay						•
	Air + Foam					•	
	Air + Air	•	•	•	•		
ALTERNATING LAYERS	1				•	•	•
	2	•	•	•			
FOWLER BOOST	Single point			•	•	•	•
	Linear	•	•				
ZONERS	Head	•	•				
	Foot	•	•				
	Body	•					
BATTERY		optional	optional	optional	optional	optional	optional
MCM		•	•	•	•	•	•

## References

- 1 MCNICHOL, Laurie, Carolyn WATTS, Dianne MACKEY, Janice M. BEITZ a Mikel GRAY. Identifying the Right Surface for the Right Patient at the Right Time. *Journal of Wound, Ostomy and Continence Nursing* [online]. 2015, 42(1), 19-37 [cit. 2018-06-13]. DOI: 10.1097/WON.000000000000103. ISSN 1071-5754.pdf. Accessed 2/25/13.
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- 10 BROWN, Sarah, Isabelle L. SMITH, Julia M. BROWN, et al. Pressure RELieving Support SURfaces: a Randomised Evaluation 2 (PRESSURE 2). *Trials* [online]. 2016, 17(1), - [cit. 2018-08-09]. DOI: 10.1186/s13063-016-1703-8. ISSN 1745-6215.

# Virtuoso®

Patient

- Superior prevention of pressure injuries
- High level of patient comfort, especially for long stay patients
- Reduced length of stay



- Intuitive Controls
- Time-saving
- Simple training



Staff

Management

- Reduced costs of pressure injury treatment
- Efficient management
- Reduced risk of human error



 **wissner-  
bosserhoff**



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